THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XCI.] THURSDAY, AUGUST 27, 1874. [No. 9.

Original Communications.

COTTON-WOOL DRESSINGS FOR WOUNDS.

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Read before the Massachusetts Medical Society, June 2, 1874.

IN December, 1870, Alphonse Guérin, Surgeon of the Paris Hospitals, now at the head of a surgical service at the Hôtel Dieu, instituted a new dressing for wounds, consisting, mainly, in the use of cotton wool, which is applied in very large quantities around the wounded limb, rendered firm and compact by tightly applied bandages, and left undisturbed for several weeks. Such a treatment was certainly a great novelty, and seems, at first sight, an eminently unsurgical proceeding; any one unfamiliar with the security of the new dressing and its admirable results would shrink from the idea of accepting the responsibility of an amputation stump or of a severely injured limb which must remain hidden from view for two or three weeks; it seems as if irremediable mischief must ensue during that space of time, in the shape of gangrene or retraction of flaps, burrowing of pus, erysipelas and pyæmia, with death or additional mutilation for the patient, and disgrace for the surgeon. Such is the picture that arises in the mind when the cotton wool dressing is first heard of, and even now we wonder at the apparent temerity of the surgeon who first ventured so to depart from the traditions of his art. A glance at the history of this recent innovation will show us that the cotton wool dressing is by no means irrational in conception, nor unsuccessful in practice. On the contrary, it has given such admirable results in the hands not only of its inventor, but of many others, by whom it has been enthusiastically taken up, that we are forced to admit that it must be, at least, worthy of attention and of study, if not of adoption.

During the Franco-Prussian war, and during the Commune, the mortality among the wounded soldiers in Paris was very great, chiefly from pyæmia and allied forms of hospital infection. Dr. Guérin, having charge of large numbers of wounded men, was led to make experiments, with a view to discover some means of averting the terrible complications which made death the almost inevitable result of every gun-shot wound, however treated; believing in the germ theory of putrefaction and of septicæmia, and knowing the power of cotton wool to deprive air of the putrefactive particles which it carries with it, he devised the cotton wool dressing, and immediately applied it in the Military Hospital of St. Martin, and in his wards at the St. Louis Hospital, where his own practice and that of his colleagues had, till then, given the most disastrous results. Notwithstanding the unfavorable conditions in which his first experiments were made, and his

own inexperience in the use of the new dressing, his efforts were crowned by immediate success; other surgeons, surprised at seeing his cases of amputation on the way to recovery, soon followed his example, and were similarly rewarded, after occasional disappointments, due to carelessness or lack of experience in the application of cotton wool. Guérin himself, after the war, was transferred to the Hôtel Dieu, where he found himself in charge of wards which had long been celebrated for their unwholesomeness, chiefly on account of frequent and severe cases of erysipelas. Here, also, his dressing continued to prove successful, enabling him to contend with the various forms of hospital infection which may be said to be endemic in the Paris hospitals, even in ordinary times.

Having thus briefly reviewed the circumstances which preceded and followed the adoption of the cotton wool dressing in Paris, I will now enter into a somewhat detailed account of the theory and practice of this new treatment of wounds.

If we wish to apply Guérin's dressing in an intelligent manner, and to carry out successfully all the rules laid down by its inventor, we must be governed in every step of the process by certain fundamental dogmas, which may, perhaps, still be considered as theoretical, but which have the approval of many of the first pathologists of our time, and which may be said to acquire a considerable measure of demonstration from the success of the very methods of treatment which their adoption has suggested. Therefore, without going at any length into the vast subject of germs, ferments and fermentations, we will simply recall, as briefly as possible, certain data which must be kept in mind if we wish to understand the object and the *modus operandi* of the cotton wool dressing.

The chief danger of wounds which are not rapidly fatal to life is known to arise from secondary febrile complications of an infectious nature. By some pathologists, the different varieties of febrile disturbance following traumatism, of which the most fatal is pyæmia, are all comprehended under the general term septicæmia, which designates a state of general infection, due to the absorption of putrid animal matter from an open wound; the putrefaction of discharges, which give rise to the production of the infecting material, results from the access of contaminated air, the contamination of the air being characteristic of the conditions which constitute what has been called "hospitalism." The nefarious influence exerted upon injured parts by air as it exists in any hospital ward is exemplified by the difference between a simple and a compound fracture. This influence of air upon open wounds is undisputed. But air is a complex body; it consists of various gases and vapors, mixed and holding suspended an infinite number and variety of solid particles, visible and invisible to the naked eye, and comprising animal, vegetable and mineral matter, and animal and vegetable organisms, dead and alive. Is it the air itself, the mixture of oxygen and nitrogen, which is the mischievous agent? Not so, if we may believe the evidence of Pasteur's numerous and most probant experiments, which show that air reduced to its gaseous constituents by heat or by filtration does not suffice to develope putrefaction of animal matter. A striking illustration of this fact, brought forward by Lister, is seen in the absence of putrefaction and consequent hectic disturbance in cases where a collection of blood and air within the

pleura has been the consequence of a fractured rib with wounded lung; here the air, during its passage through the bronchi, great and small, and through the pulmonary vesicles, undergoes a thorough process of filtration, which deprives it of all the noxious particles which it originally contained, and renders its contact with the effused blood quite innocuous.

These facts demonstrate that putrefaction in all its modes requires as an indispensable determining condition the access of air charged with certain materials; and as putrefaction is always accompanied by the development of minute living organisms, it has been plausibly supposed that the latter phenomenon was the cause of the former, and that the noxious materials conveyed by the air were the seeds of living organisms which are invariably found to be developed in putrefying animal matter. Hence the name of "germs," which has been given to the mischievous agents conveyed in unmodified air. It is true that these so-called "germs," unlike the adult organisms to which they give rise in putrescible matter, have not been seen and microscopically identified, and that their existence, being only known to us through their effects, is as yet only hypothetical. Nevertheless, the germ theory of putrefaction is a convenient one, and we will use the word *germ* to designate the unseen *nescio quid* which imparts to air its putrefactive properties, and which can be removed from the air, or rendered innocuous in various ways, namely, by heat, by filtration, or by chemical agencies.

Various modifications of surgical practice have been devised, based on the theory that putrefaction is the source of the septic material, and depends upon the contact of unmodified atmospheric air. These innovations have proved more or less successful and more or less easy of application. The use of chemical agents capable of destroying life in the minute organisms which are supposed to constitute the septic germs, constitutes the chief means of purification of air which has been tried; Lister's antiseptic treatment of wounds affords the most successful and best known example of this use of chemical agents. Until Guérin's experiments, filtration had hardly been tried, or at least not successfully. Tyndall had shown, by his experiments with a beam of sunlight traversing a dark space, that a sufficient thickness of cotton wool would arrest the solid particles conveyed by air in the shape of dust, and Pasteur had established the fact that urine, boiled and put away in flasks stopped up with cotton wool, did not undergo putrefaction. Lister had even made some use of this property of cotton wool, in connection with his antiseptic treatment; but to Guérin belongs the credit of having demonstrated the full surgical value of cotton wool, and of having shown how it must be used; his dressing possesses, as we shall see, other merits besides the paramount advantage of preventing the action of septic influences; this, however, is its main object, and the guiding principle in its application.

We will now consider the manner of applying the dressing, and, for convenience's sake, we will suppose a case of leg amputation at the seat of election. We will first describe the materials which must be in readiness.

The wool itself must be of good quality, tolerably white, and clean and free from foreign matter; if possessed of a glazed surface, this

must be stripped off, and the sheets of wool, torn into long strips about a foot wide, must be rolled up so that they may be methodically applied around the part to be dressed. It is difficult to believe what an enormous quantity of wool may be used in a single dressing; in one of Guyon's cases, of which you see a thermographic chart, I found the wool on removal to weigh over two pounds, and Guérin has sometimes used as much as four pounds. The most common, and, perhaps, the most detrimental mistake of beginners is to apply much too small a quantity of wool.

Besides the wool in sufficient quantity, a number of rolled bandages, two inches wide and eight or ten yards long, must be at hand. The bandages preferred by Guérin are of unwashed linen; but no doubt the cotton rollers used in this country would be quite serviceable. The provision of bandages must be very abundant, as may be recognized when it is known that the bandages removed from some of Guérin's dressings have been found to amount in all to 150 or 200 yards! This estimate comprises the rollers applied at the first dressing, as well as those added subsequently to make the dressing compact, after some loosening of the bandages had taken place. I will say here, that it is a mistake, for reasons that will later become apparent, to use any stiffening substance wherewith to fix the bandages.

The materials being thus supposed ready, we will now describe the application of the dressing. In the first place, the operation and the dressing should never be performed in a septic atmosphere; never, consequently, in the wards. The object of the wool dressing we know to be the exclusion of septic germs from the wound; but this precaution against putrefaction by penetration of germs can only be successful provided we avoid imprisoning other germs under the dressing at the moment of application. The wool should, therefore, be kept stored up in bales out of reach of contamination by the air of the surgical ward, and it should be unpacked and prepared in the apartment in which it is to be used. This was about the only precaution used by Guérin in his early cases; now, after entire cessation of all hæmorrhage, he washes out the wound with a solution of carbolic acid (one per cent.); moreover, he intends, in future, following advice recently given by Pasteur, to purify his wool by subjecting it to a temperature of about 400° F., in a double-walled oven, heated by boiling oil. With regard to ligatures, Guérin uses silk, and cuts the threads off short, except one end of the ligature which holds the main artery of the limb; it would undoubtedly be more prudent to use the antiseptic carbolized catgut of Lister; Guérin's dressing has, nevertheless, been admirably successful without all these refinements, which would, perhaps, if carefully carried out, absolutely annul all possibility of septic infection, even in its mildest degree or form.

Everything being ready, an assistant sustains the limb, which projects freely beyond the edge of the operating table. The first step varies according as immediate union is or is not to be sought. In the first case, sutures can be used, unless the surgeon has acquired sufficient skill in the application of the dressing to be able to secure accurate coaptation of the flaps by the simple pressure of the cotton wool. If immediate union is not to be attempted (and such is the practice generally preferred and advised by Guérin), the space between the flaps, which are held apart by an assistant, is to be completely filled with

little wads of loose cotton wool, evenly superposed. Then the sheets and rollers of cotton wool are to be wrapped and wound over and around the limb, evenly and methodically, so as to surround it with a homogeneous mass, of even thickness, which must, in all cases, extend beyond the first joint above the seat of amputation; thus, for any operation below the knee or elbow, the whole thigh or arm must be included in the dressing; and for any operation higher up, the pelvis and abdomen, or the shoulder and chest must be included. As I said before, the quantity of wool to be thus applied seems at first sight monstrous and absurd; the only way to put on enough, says Guérin, is to put on too much; so long as strong pressure through the wool upon the locality of the wound gives any pain, the quantity is still insufficient, and more must be added.

Now comes the second step, more difficult to accomplish than the first, namely, the application of the bandages. Our object now is to fix the cotton wool securely, so as to prevent its getting displaced, and to apply, through its superincumbent mass to the parts beneath, a very considerable degree of elastic compression, this being, in Guérin's eyes, almost as important a factor of success in the use of his dressing, as is the filtration of air. The first turns of the bandage serve to secure the soft mass of wool, and to mould it, as it were, into something like its future shape and size; oblique and spiral turns are made in various directions up and down the limb, wherever any bulging shows an insufficient compression of the wool, particular care being taken to compress the end of the dressing, as well as its sides; for this purpose, a sort of capellina has to be applied over the end of the stump. Gradually, the cotton wool gets covered at every point, by the successive overlapping turns of the roller, which grow tighter and tighter as the application progresses; at the same time, the mass of wool grows smaller and more compact, while preserving an even surface and a symmetrically ellipsoidal or ovoid shape; the last layer of rollers must be applied with all the strength that the strongest hands can afford; this enormous degree of constriction will give no pain, and do no harm to the injured parts, provided the quantity of wool be sufficiently large. When completed, the dressing forms a firm, smooth, hard mass, of uniform consistency, through which a blow or any strong pressure expends its force without reaching the subjacent parts, and in which percussion gives a sonorous note like that yielded by a healthy thorax.

The patient is then carried to his bed; his limb is laid upon a folded sheet, and covered by a cradle. There now remains little to do, but to carefully watch the patient's general health, and the condition of the dressing. With regard to the dressing, one additional measure remains to be taken; after the lapse of some twenty-four hours, the mass of cotton wool, becoming packed, loses somewhat of its expansive elasticity, so that the bandages become loose; it therefore becomes necessary on the second day to apply another layer of bandages, so as to obtain anew the firm consistency and the elastic compression of the freshly applied dressing; generally, after this second application of rollers, the dressing will keep its consistency and shape undisturbed for many days; still it must be watched, and its defects must be remedied as soon as apparent, by the application of new and tight bandages. It is on account of this necessity to renew the compression

from time to time, as the wool gets packed and the bandages loosen, that the silicated bandage, added by Ollier (of Lyons), does not constitute a happy modification of Guérin's dressing. If all go well, the dressing may be left undisturbed for two or three weeks; we will see presently in what condition the stump and wound will be found at the expiration of this time.

But how are we to know that all is going well under the mass of dressing which conceals the injury from our eye for so many days? We can keep sufficiently informed to allow our minds to be at rest, by carefully watching: 1. The state of the dressing. 2. The general condition of the patient.

1. *The State of the Dressing.*—Some discharge necessarily takes place from the wound; if it be moderate in amount, and if the dressing be sufficiently abundant and compact, the discharge remains confined in the depths of the cotton wool, away from deleterious atmospheric influences. Otherwise, it will soak through the entire thickness of dressing which covers the wound, so as to spot or wet the folded sheet on which the limb rests, or else it may run along the posterior aspect of the limb, between the skin and the innermost layer of wool, and make its appearance at the upper limit of the dressing. In either case, as soon as the discharge reaches the exterior, the spot where it appears should be disinfected by an application of a saturated solution of carbolic acid, and a fresh layer of cotton wool and rollers should be added, so as to completely cover over and bury the weak spot. If these measures be applied in time, no harm will result from a moderate soakage of the inferior portions of the dressing. As time progresses, even in the most successful cases, more or less *odor* is given off by the dressing; in all cases that I have seen, there has been decidedly a bad smell, of a penetrating and somewhat pungent quality, sufficiently disagreeable to make it necessary to resort to deodorizing solutions, which may be sprinkled over the surface of the dressing. The smell, however, is distinct from that of putrefying pus, or of foul wounds in general, and Guérin asserts and shows by experiment that his dressing, applied to a sound limb, acquires much the same smell as that which it gives off when covering an amputation wound. On account of these facts, I think that the odor of the dressing affords, generally, no clue to the condition of things within, unless, indeed, it be very strong and of a decidedly putrid quality.

2. *The general condition of the patient* constitutes by far the most reliable index of the state of things under the cotton wool; as long as all goes well, he is remarkably free from pain, enjoys good spirits, eats and sleeps well; moreover, and here we have the most trustworthy guide, his temperature, taken with a thermometer twice a day, keeps within the limits of a moderate degree of traumatic fever of short duration. The daily use of the thermometer is absolutely indispensable in these cases, and no one should attempt, without it, to carry out the cotton wool treatment. The indications afforded by the thermometer are wholly reliable, and sufficient for the safe management of the case. All untoward events and accidents, as sloughing of flaps, burrowing of pus, contamination of discharges, and septic infection are announced by an immediate rise of temperature, which betrays the unseen mischief, and puts the surgeon on his guard; it then becomes at once his duty to remove the dressings, and to inspect the wound with a view

to remedying, if possible, the unfavorable conditions which have given rise to the trouble; it can, however, be safely asserted that these accidents are very rare, and that they are always due to some defect in the application of the dressings; when these have been carefully and skilfully applied, they may almost always be left undisturbed till the healing process is far advanced, if not almost completed.

Supposing all to have gone well, the dressing is left undisturbed till the fifteenth or twentieth day, when it may be removed; it is then very interesting to observe the appearances presented by the dressings and wound. The bandages being first unwound, or cut through and removed, the cotton wool should be torn open, layer by layer, along the anterior aspect of the stump. When the immediate neighborhood of the wound is approached, the deepest layer of wool is found to be converted by the inspissated discharges into a moist, brownish felt cap, which covers the end of the stump, and which, around the wound, adheres closely to the skin. This adhesion of the deepest layer of wool to the cutaneous surface of the flaps is a favorable occurrence, as it confines the discharge, and prevents it from making its way along the posterior surface of the limb, so as to reach the upper limit of the dressing, and thus come in contact with the outer air. Between the surface of the wound and the neighboring deepest layer of wool is a small space containing a few drachms of thick fluid, resembling pus. This, on examination, is found to be a thick, yellow or brownish, somewhat offensive fluid; when subjected to a microscopical examination, it turns out to be an emulsion of fine, fatty granules, very few pus cells being distinguishable; this condition of the pus is due, no doubt, to the cells having undergone a fatty degeneration, in consequence of the long confinement. Moreover, in cases where the dressing has been completely successful, no traces of vibriones or minute organisms, dead or alive, are to be found. Pasteur himself, whose authority on the subject of ferments cannot be disputed, has lately passed several hours at the Hôtel Dieu with Guérin, examining patients, and in the five cases in which the discharge found on removal of the dressing was examined by him, he failed to detect any minute organisms, such as are the inevitable concomitants of putrefaction. The next striking thing about the discharge is its very small quantity, which often does not exceed half an ounce, in cases where the dressing has remained undisturbed for over three weeks; this is a subject of some surprise, when we reflect how long the discharge has been accumulating, and contrast the amount with that which would have been given off and removed in daily dressings conducted in the usual way.

The discharge being removed, the wound and stump are found to be in a most satisfactory condition. Of course, immediate union is wholly out of the question, when the space between the flaps has been filled with wool; when steps have been taken in view of immediate union, it may be found to have taken place more or less completely by the sixth day. But in the case we are supposing, the wound has granulated from the bottom, and by the end of the two or three weeks that have elapsed, the bone is found completely covered, and the space between the flaps is partly filled by abundant, rosy-red granulations, of the most satisfactory aspect. The limb above offers a perfectly natural and healthy appearance, being neither red nor swelled, and looking as if the operation had just been performed.

The dressing having been removed, and the wound and stump being found in a satisfactory state, as just described, the question arises whether we should now apply a second dressing similar to the first, or resort to one of the usual modes of treatment. Guérin used at first to reäpply the wool, sometimes two or three times, till the wound was completely healed, but it has been recognized that *after a certain stage of reparation was reached, further progress was very slow under the cotton wool.* Guérin's practice now is to remove his first dressing at the end of the second, third or fourth week, by which time he confidently expects to find the bone covered, and the space between the flaps filled to a considerable extent with granulations; then, if the sanitary condition of his wards appears to be tolerably good, he brings the flaps together with adhesive plaster, and applies an ordinary, open dressing. But if the bone is not covered, or if there be reason to fear infection through the exposed open wound, he reäpplies a wool dressing, as before, and leaves it undisturbed for a week, ten days or a fortnight.

Before passing to other considerations, it may be well to briefly recall the important points in the application of the dressing, and in the management of the case. Hæmorrhage must have entirely ceased, and its recurrence must have been carefully guarded against before the dressing is applied. A very large quantity of cotton wool must be laid on, and a very great degree of compression must be brought to bear upon it by means of numerous carefully applied and tightly drawn bandages. Guérin's precept to beginners is to "apply too much cotton wool, and to bandage too tightly." Finally, the patient's temperature must invariably be taken twice a day, in order that any complication may be immediately detected; with this supervision, the cotton wool dressing is a perfectly safe mode of treatment; without it, none, perhaps, could be more dangerous.

We have hitherto been supposing a successful case, in which, the dressing having been skilfully applied, all had gone well. But the conditions are not always so favorable, and certain accidents and complications may be met with, due, almost always, either to the primary injury, or to defects in the dressing.

The fear of secondary hæmorrhage taking place unobserved under the wool has been to many a cause of distrust in the new dressing. I have never seen a case in which secondary hæmorrhage occurred; but Hervey, lately Guérin's interne, in an exhaustive essay upon the subject of cotton wool dressings, asserts that a very slight amount of blood speedily traverses the dressing, and appears at the surface in the shape of a rapidly spreading spot, so that, by proper watching, the accident can always be detected in time; the measures to be adopted are sufficiently obvious, and need not detain us.

Freedom from pain is a striking feature of the cotton wool treatment, as well as one of its great advantages; in a very few hours, the immediate pain of the operation passes away, not to return, provided the dressing, well applied, be subsequently well managed. According to Hervey, persistent pain is only observed in cases where, the quantity of wool being insufficient, air has gained access to the wound, and has set up inflammatory action, or else in cases where sloughing has taken place. This latter accident is rare, not having been met with at all in Guérin's practice. Hervey has seen it a few times in the wards of

other surgeons, and attributes its occurrence in most cases to the primary injury, which had extended farther than appeared at the time when amputation was performed; in a very few cases, sloughing of the flaps appeared to be due to the wound having been too tightly packed with wads of compressed wool; Guérin's practice is, as we saw, to fill the wound with loosely laid wool. Be this as it may, sloughing is rare; certainly not more common than with other modes of treatment.

Suppuration, whether confined in the shape of abscesses, or extensive and burrowing, is not met with in cases where the dressing is properly applied so as to ensure the maintenance of a sufficient degree of compression; on the contrary, the amount of pus discharged at the surface of the wound is remarkably small, and the soft parts of the stump being neither swelled nor red, and offering no features of the phlegmonous condition, are in a state which is exactly the reverse of that which favors deep suppuration.

The subject of erysipelas may be disposed of in a few words. Not one case has been seen among Guérin's patients, although he has lately been applying his dressing in the Salle St. Come of the Hôtel Dieu, where this complication was formerly very frequent and fatal. Erysipelas occurred in one of Verneuil's cases where the first cotton wool dressing was removed, and a second one applied *in the ward*. A similar imprudence was once committed by Guérin, and the patient died of pyæmia. These two cases are forcible illustrations of the noxious influence of contaminated air, and show the absolute necessity of never allowing it to come in contact with recent wounds, unless purified or rendered harmless by one of the physical or chemical means which are at our command.

I have still to speak of fever, a most important part of our subject, on account of its prognostic significance. The limited time at my command obliges me to be very brief, and to confine myself to a few indispensable statements. In the first place, there is almost always a certain amount of traumatic fever, even in the happiest cases; the febrile disturbance is generally moderate in intensity, and of short duration, defervescence being well marked, and followed by a permanent decrease of temperature. So long as the feverishness is of moderate intensity, during the first week following the operation, the patient being at the same time free from pain, and the dressing being in a satisfactory condition, it may be confidently assumed that the case is progressing favorably; but if the temperature remain high after the sixth or seventh day, or if it re-ascend after temporary cessation of the legitimate traumatic fever, there is reason to fear the existence of some complication, which will generally be found to be due to some defect of the dressing, original or acquired. In most cases of this kind, it will be found, on examination, that some discharge has reached the exterior so as to become exposed to the air, and if the weak spot be first disinfected and then protected by the addition of a fresh layer of wool and bandages, the febrile state, according to Guérin's assertions, will subside without occasioning further trouble. Persistent pain, with fever, has been found to accompany sloughing; when these symptoms are present, the dressing must, of course, be removed.

The invasion of pyæmia is announced by the usual symptoms. Guérin does not claim that his dressing gives absolute immunity from

pyæmia in all its forms. It is known that, under certain quite exceptional circumstances, death may occur with metastatic abscesses in the viscera, and disseminated suppuration of synovial and serous sacs, without any open wound having existed, as in certain rare cases of simple fracture; when the infectious influences have reached this degree of intensity, we could hardly expect that patients with open wounds under the cotton wool should escape. But the new dressing does confer, beyond a doubt, a remarkable degree of relative immunity from pyæmia, as well as from the other secondary affections depending upon hospitalism. It is for this reason that the new dressing has been so enthusiastically and so generally adopted among Guérin's fellow surgeons; Professors Verneuil, Broca, Trélat and Gosselin, Drs. Guyon, Panas, Tillaux, Cruveilhier, Duplay, Vidal, Labbé and Desormeaux, all surgeons of the Paris hospitals, and Ollier, of Lyons, have successfully applied the cotton-wool dressing, and have reported cases. No better field could possibly be found in which to test the efficiency of any antiseptic treatment than that afforded by the surgical wards of the Paris hospitals, and the general adoption of the wool dressing, notwithstanding the jealousy with which all innovations are greeted in France, would alone suffice to show that the success attendant upon its use must have been very great. Analogous results have undoubtedly been obtained by Lister, but his dressing is so complicated and so difficult of performance as to have exhausted the patience, sooner or later, of almost all who have tried to imitate his practice, and who had not the affectionate interest of the inventor of a new method to keep up their zeal throughout the arduous labors entailed by the antiseptic method. The cotton-wool dressing, on the contrary, though not *easy* of performance, as might erroneously be supposed, is successfully applied by others besides its inventor, and is giving almost universal satisfaction among those who have learned to use it.

To what cases may the wool dressing be said to be applicable? Undoubtedly amputation wounds have hitherto furnished the most numerous and striking examples of success; among them, we find one case of hip-joint amputation, reported by Hervey, from Tillaux's practice. Immediate union has been occasionally attempted and obtained, with a great saving of time, the dressings being removed as early as the sixth day in some cases; but Guérin still generally adheres to his primitive method of filling the wound with wool, thereby sacrificing all chance of immediate union, and he advises all beginners to imitate this practice.

Resections of joints and partial resections of bones have given good results under the wool dressing. Guérin's first success was obtained in a case of partial resection of the radius, and since then the elbow-, shoulder-, knee- and ankle-joints have been successfully treated after excision, by the new dressing.

Guérin's method has been applied to almost every variety of accidental wound of the limbs, from crushed or otherwise wounded hands and feet, with fractured or comminuted bones, lacerated tendinous sheaths and joints, up to compound fractures and dislocations, with the most extensive injury compatible with conservative treatment. I only mention this class of cases, without going into the manner of applying the dressing in cases of such severe injury. The difficulties of successful application are much greater in cases of compound frac-

ture than in amputations, which are to be recommended for first trials of the dressing; injured hands and feet are also good cases for beginners, as they may be put up in the cotton wool, like amputation stumps, care being taken to separate the toes or fingers with wads of wool. As a rule, it may be said that the dressing is most easily applied to the extremities of the limbs, and that the difficulties of performance and the chances of failure increase as the injury approaches the trunk; it is, therefore, more easy to apply the dressing in an amputation of the leg or forearm than in a case where the thigh or arm is the seat of operation.

In cases of removal of the breast, the wool dressing has been applied with occasional success, but also with many failures. Indeed, the difficulties are so great, on account of the shape and mobility of the thorax, that Guérin has now given up further attempts; the trouble is that the dressing breathes, as it were, with every respiratory movement of the patient, so that it is almost impossible to prevent the air from rapidly gaining access to the discharges confined within the cotton wool.

In conclusion, I will briefly recapitulate the merits and demerits of Guérin's dressing, in order that we may be able to form some estimate of its value in practice.

Its *advantages* are the following:—1st. Entire or partial prevention of pyæmia, erysipelas and hospital gangrene. 2d. Painlessness. 3d. Immobility of the injured parts, to which, with the firm but even compression, is due the antiphlogistic action of the dressing. 4th. The rarity of the dressings. 5th. The transportability of the patient, whose injured limb is protected from all chances of mechanical injury.

The *disadvantages*, on the other hand, are:—1st. The necessity of ceaseless watching of every case by all the means at our command, including the daily use of the thermometer. 2d. The slowness with which the last stages of reparation are effected under the cotton wool. 3d. The more or less disagreeable smell which the dressing generally acquires.

From these considerations, we may conclude that the cotton-wool dressing is most likely to be useful in enabling the hospital surgeon to cope successfully with unfavorable nosocomial conditions, and for this purpose its use during the first two or three weeks may be recommended in cases of amputation or of injury to the limbs, whenever pyæmia or erysipelas are to be feared. In private practice, where the danger of infectious complications is so very slight, the wool dressing loses its first indication, and here, among a more fastidious class of patients, the smell may prove objectionable; then, again, we must remember that the rarity of dressings is perhaps counterbalanced by the absolute necessity of a daily visit from the surgeon. In military surgery, the utility of the cotton-wool dressing may be curtailed to a certain extent by the bulkiness of the material which it necessitates; but, on the other hand, the immunity from septicæmic complications which are so rife in army hospitals, the transportability of the patients, and the diminution of the labor caused by the infrequency of the dressings, appear to constitute very great advantages.

Progress in Medicine.

REPORT ON OBSTETRICS AND DISEASES OF WOMEN.

By W. L. Richardson, M.D.

(Concluded from page 189.)

Diseases of Women.

Subacute Ovaritis.—E. J. Tilt, M.D. (*Transactions of the London Obstetrical Society*, xv. 1874.)—The difficulty of correctly diagnosticating ovaritis arises chiefly from the fact that peritonitis obscures the diagnosis by embedding the pelvic organs in a mass which forms, only too often, a hard pathological puzzle. The symptoms may be divided into those known as catamenial and objective.

Although subacute ovaritis may be met with during the whole period of ovarian activity, it is most likely to occur in young unmarried women, from fifteen to twenty years of age, particularly in those who are delicate in body, sensitive in mind, and with proclivities to tubercular disease. When met with in women presenting none of these peculiarities, the patients will be found to have suffered all their lives from menstrual irregularities. Women, suffering from this trouble, complain of habitual pelvic and mammary pain, and especially of a marked aggravation of the nervous symptoms of menstruation, the menstrual flow being usually too abundant, or, as occasionally happens, too scanty. The pain of subacute ovaritis is deep seated, persistent, moderate, bearable, extending from the ovarian region to the knee, and sometimes accompanied by numbness, coldness and anæsthesia of the anterior part of the thigh. The pain gives rise to a certain degree of hesitation in the patient's movements, since she has learned to know that a sudden motion will increase it. Firm pressure on the ovarian region increases the pain and the peculiar nausea which not unfrequently accompanies it. The pain sometimes subsides soon after menstruation, only to reappear, however, a few days before the next period. It is not relieved by a free flow of the menses. Menstruation is preceded and accompanied by a marked aggravation of the usual mammary symptoms of that period, the breasts being swollen, painful and hot. Hysterical phenomena may also be present.

A vaginal examination will often throw a great deal of light on the case, even if it does not finally settle the diagnosis. The left hand should forcibly depress the ovarian region, while the two first fingers of the right hand examine, *per vaginam*, both sides of the body of the uterus. A forcible inclination of the cervix uteri to the side on which the disease is supposed to exist, stretches the connections of the fundus uteri and the ovary to such a degree as greatly to increase the pain. Sometimes the ovary descends into Douglass's pouch, where it can be felt as an ovoid body, about two inches long, either more or less fixed by peritonitis, or fleeing from the finger, only, however, to return, as by a kind of ballottement. This body, when seized, will be found to be semi-elastic and peculiarly sensitive to pressure. A combined rectal and vaginal examination will often be found of great service in making out the diagnosis.

As regards treatment, a well-appointed hygienic course for menstrual

and inter-menstrual periods should be advised, combined with a tonic treatment. Six leeches should be applied to the suspected ovarian region, which should subsequently be painted with oleate of mercury for six weeks, after which counter-irritants may be used.

In all cases where uterine disease coexists, it should be carefully treated, since it will be found impossible to relieve an ovaritis while a disease of the uterus is allowed to continue unheeded. In these cases, in addition to the above treatment, an injection should be ordered twice a day of acetate of lead. Not unfrequently, in these cases, marriage will be immediately followed by a severe attack of uterine inflammation.

Change of Life.—As regards the relations of the change of life to insanity, Dr. H. Sutherland closes a valuable paper *(West Riding Asylum Reports,* vol. iii.; *British and Foreign Medico-Chirurgical Review,* April, 1874) with the following conclusions:—

1. That insanity occurring at the change of life is not usually caused by that condition *per se,* but is most frequently due to some other moral or physical cause coincident with that period.
2. That the age most liable to attack is forty-five years and two months.
3. That the onset of the insanity generally occurs one year after the cessation of menstruation.
4. That the married state does not seem to predispose to that disease.
5. Nor does the number of the patient's children have any predisposing effect.
6. The forms of insanity most common are melancholia, and, more rarely, mania.
7. There is a certain group of symptoms sufficiently characteristic to enable us to diagnosticate a case of climacteric insanity, independently of any knowledge of the history of the case.
8. The prognosis is decidedly favorable, recoveries being over 40 per cent. of those attacked.
9. The duration of the attack is usually more than three months, and less than three years. Complete recovery is not to be expected until twelve months after the commencement of the attack.
10. With regard to treatment, mild sedatives and aperients, a careful watchfulness of suicidal tendencies, and the observance of a quiet and regular course of life, are chiefly indicated.

Gangrenous Vulvitis.—This affection is occasionally met with in young girls as a sequela of scarlatina, a severe attack of fever, or in the course of any serious disease affecting the whole organism. Various remedies have been suggested, with a view of cutting short the rapid spread of the evil. The actual cautery in the hands of Guersant and Trousseau, and the chloride of zinc, as used by Rilliet and Barthez, have, in many cases, proved successful; but both of these methods are exceedingly painful, and oftentimes uncertain in their action.

In a recent article *(Le Progrès Médical)* M. Parrot records the gratifying results which have followed the use of the iodoform powder in the wards of the Children's Hospital (Paris). Until recently, M. Parrot had been in the habit of treating the disease either with a concentrated solution of the chlorate of potash, or by nitrate of silver. The success which followed these methods of treatment was not to be compared with that which he has obtained since the introduction of

the use of powdered iodoform. Within two or three days after its use the progress of the ulcer seemed invariably to be arrested, and the wound would immediately begin to take on a healthy action. The remedy was used very freely, great care being taken that every part of the ulcer was completely covered with the powder. The dressing was always applied daily, and in cases where the discharge from the ulcer was very great, it was found advantageous to renew the dressing at night during the first two days.

Vascular Growths of the Urethra.—Dr. A. W. Edis contributes (*British Medical Journal*, April 4, 1874) a valuable paper on the treatment of this class of growths without an operation. After alluding to the unsatisfactory results which usually follow the treatment of these growths, he advises the use of chromic acid, with which he has succeeded far better than with any other agent. His method has been to apply a saturated solution of the acid by means of some cotton wool wound about the end of a piece of stick. The cotton wool, well moistened with the acid, is to be pressed upon the growth until it becomes shrivelled. Care must of course be taken to protect the surrounding parts from coming in contact with the acid. This can best be done by covering them with lint or cotton wool, soaked in a solution of carbonate of soda. This same solution must be applied to the growth subsequently to using the chromic acid, so as to neutralize any excess of the acid which may be left behind. The use of chromic acid in this way causes very little pain or inconvenience to the patient, while the sensitiveness of the tumor is almost entirely destroyed. It may be necessary to make several applications before the difficulty is entirely removed. These subsequent applications should be made at intervals of a week. Several cases are given in detail in his article to illustrate the treatment he advises.

Dr. Robert Barnes advises (*Diseases of Women*, 1874, p. 767) the application of the actual cautery, using cold-water dressings after the operation. After the sloughs have fallen, the use of an astringent lotion will complete the cure.

Vaginismus.—Prof. Breizky (*Schmidt's Jahrbücher*, 6, 1873) divides this affection into three classes. The first is where it is met with in childless but healthy women, in whom no disease of the genital organs can be discovered. There is an abnormal sensibility during sexual intercourse, which, in some cases, is rendered impossible, owing to the excruciating pain which it produces. The hymen is usually found to be intact. In the second class, local lesions, productive of more or less irritation, will be found, which give rise to a reflex spasm of the constrictor vaginæ. These lesions are various, but chief among them may be mentioned fissures or ulcerations in the region of the hymen, cicatrices of the vulva, vaginal or urethral excrescences and rectal growths. Very frequently, this form of the malady is found in women who have been recently confined. The third class occurs as one manifestation of hysteria, or any other morbid condition of the nervous system.

As regards treatment, the writer discourages too much local treatment as tending rather to increase than to relieve the difficulty. Where any new growth or excrescence exists, it should be removed, and any remaining cicatrices should be divided. The vagina should be dilated, not gradually but forcibly. The former method of dilata-

tion too often causes serious irritation. In cases where the hymen exists, it should, of course, be incised. The dilatation of the vagina may be accomplished by a speculum whose blades are forcibly expanded, or by the hands of the operator.

Fibroid Tumors of the Uterus.—Dr. Bengelsdorf publishes (*Berliner Klinische Wochenschrift*, Jan. 12, 1874) the results of some experiments he has made as to the efficacy of hypodermic injections of ergotin in cases of uterine fibroids. He used the same formula which Prof. Hildebrandt has so highly recommended, but he did not obtain such favorable results. He thinks that the statements of Prof. Hildebrandt require some modification. According to his experience, the value of ergotin in these cases is due to the fact that it acts by contracting the bloodvessels which go to nourish the foreign growth. In other words, an atrophy follows the diminution in the amount of blood supplied to the tumor. Fibromata, which appear after the cessation of the function of menstruation, are not, therefore, acted upon by the ergotin, since, owing to a deficient vascularization of the tumor in these cases, it resembles cicatricial tissue. In chronic metritis, however, the writer has seen marked benefit follow injections of ergotin, the enlarged and painful condition of the uterus and the accompanying leucorrhœa yielding much more speedily than was the case when the remedy was given internally.

Sponge Tents.—Dr. Lawson Tait advises (*Medical Times and Gazette*, Jan. 10, 1874) the use of the oil of cloves as a disinfectant in the manufacture of sponge tents. He claims that tents charged with a five per cent. solution of the oil of cloves will remain for a long time in the uterus without becoming in the slightest degree offensive.

Physicians, who are frequently obliged to use sponge tents, are aware of the extremely offensive smell which a sponge tent acquires after remaining in the uterus a few hours. The use of a wad of cotton wool, soaked in glycerine, and introduced into the vagina immediately after the introduction of a sponge-tent has frequently seemed to the writer of this report to act as a partial disinfectant, but not as satisfactorily as Dr. Tait claims follows the use of the oil of clove.

Dr. De F. Willard has recently reported (*American Journal of Obstetrics*, Aug., 1874) a case of death on the ninth day, following the use of sponge tents.

In the discussion which followed the report of this case at a meeting of the Philadelphia Obstetrical Society, two analogous cases were reported. Dr. Goodell, the President, also reported a case of death, which had followed the use of three sponge tents. He believed, however, that it was not the introduction of the first batch of tents into the cervical canal which did the mischief, but those which were subsequently used. The first tent irritates the cervix uteri and causes a congestion and subsequent abrasion of the mucous membrane. The fœtid discharges or septic material generated by succeeding tents is absorbed by this abraded surface. His custom was to first stretch open the cervical canal by means of a uterine dilator, and then, having introduced the largest sponge tent possible, to insinuate around it several small laminaria tents. In this way, the necessary dilatation is accomplished by one application of tents. During the presence of the sponge tents within the cervical canal, he invariably recommends the free use of detergent vaginal washes.

Boston Medical and Surgical Journal.

Boston: Thursday, August 27, 1874.

Although we have thus far refrained from joining in the hue and cry against those who meditate destruction to the Boston Common under the guise of much needed city improvement, it is not because we are not in full sympathy with the conservative party on this subject. Changes in this country take place so rapidly, and the sweeping away of old landmarks by the constantly increasing demands of business in all our prosperous cities is a matter of such frequent occurrence, that it is hardly to be wondered at that men are to be found who look upon the Common as a serious obstacle to the growth and development of the business portion of the city. To such persons, it avails little to say that this spot is rich in old memories, one of the few links we still possess that bind us to the past, or even that such large spaces covered with pure vegetation are in reality "the lungs of the city." To talk to them about the advantages to the masses of such a resting place during the stifling weather which drives them from close, musty rooms and narrow streets, steaming with indescribable odors, to breathe air cleansed by fresh leaves and grass, is but to excite derision. The "practical business man" is not to be misled by sentiment or theory, and his mind prefers to dwell upon a more congenial picture than the simple beauties of the Common afford.

With Commonwealth and Columbus Avenues extended through to some point on Tremont Street, and such additional "improvements" made as would doubtless suggest themselves, opportunities would be offered for developing valuable portions of the city which now are not available for business purposes. It is true, the Common would greatly suffer, and ultimately be destroyed by this plan, but of what use can it be after we have once obtained a new and larger park beyond the city limits? Such are the views and arguments of a not uninfluential set of men in this city, who would be glad to see streets and shops in place of green grass and shady walks. We believe these men greatly under-estimate the value of an open space in the centre of a large city. Instances of such parks are to be found in nearly all the larger cities of Europe, and to a somewhat limited extent also in this country. In London, particularly, some of the most valuable and central portions of the city are preserved in this way, and to an extent that would make our own park seem small in comparison. When parks are not practicable, we find broad avenues, with plenty of tree shade, supplying their place. This want of open space for vegetable life to thrive in

finds expression in some form almost everywhere, and where this want is ignored, the penalty is sure to be exacted sooner or later. Overcrowding is as dangerous for cities as it is for tenement houses, from a sanitary point of view, while the dangers of fire are greatly increased, to say nothing of the effect upon public morals.

The Common, if it escapes the "improvements" contemplated, will be more appreciated by another generation, when the city shall have far outgrown its present limits. It will then doubtless form the eastern terminus of a chain of parks, some of which will, as they properly should, lie on the outskirts of the city, while others extend into and intersect the crowded centres. We have lately seen a plan for a water park, in which the Boston of the future is graphically represented. The sketch serves to show what the possibilities are with the natural advantages which the peculiar conformation of land offers us. To cut up the Common piecemeal, a result sure to follow any such dangerous precedent as recently has been suggested, or to neglect to enlarge our breathing spaces by uniting them with a series of parks, some of which should involve the improvement of certain waste lands and sheets of water in our immediate neighborhood, will not only violate all sanitary laws, but will, without doubt, seriously interfere with the future prosperity of the city.

We have received the following circular from the Supervising Surgeon, the object of which is to obtain all possible information in regard to the late epidemic of cholera.

OFFICE OF THE SUPERVISING SURGEON,
U. S. MARINE HOSPITAL SERVICE,
Treasury Department, August, 1874.

Doctor,—The Supervising Surgeon of the United States Marine-Hospital Service having been designated by joint resolution of the XLIIId Congress, approved March 25, 1874, in connection with a medical officer of the Army, "to confer with the health authorities and resident physicians of such towns [as were visited by the cholera epidemic of 1873], and to collect, so far as possible, all facts of importance with regard to such epidemic"—for the purpose of making a report of the same to the President of the United States to be submitted to Congress—I have the honor respectfully to solicit a detail of the facts which came under your observation concerning the propagation and spread of the disease during that year.

The following memorandum embraces, substantially, the points upon which information is desired:—

1. Name, sex, and age of patient.
2. Residence of patient—town, street and number.
3. Day and hour of attack.
4. Premonitory symptoms, their nature and duration.
5. Progress of the disease:—
   a. Day and hour of beginning of rice-water discharges.
   b. Day and hour of beginning ot cramps.
   c. Day and hour of beginning of collapse.
   d. Period and extent of suspension of renal function.
   e. Nature of treatment and result.
   f. Day and hour when convalescence began.

g. Day and hour when death occurred.
h. Post-mortem appearances in detail.
6. Story of house occupied and height of floor from ground.
7. Sanitary condition of house and enclosure:—
i. As to cleanliness of rooms—clean, neglected, filthy.
k. As to ventilation and light—good, defective, bad.
l. As to drainage of house—good, obstructed, absent.
m. As to drainage of ground—good, obstructed, absent.
n. As to location and condition of privies or water-closets, connection with street-sewer, mode of flushing, of ventilation of soil-pipe, disinfection, &c.
o. As to surface water, garbage, or filth about the premises.
8. Source and quality of water-supply. If from a well or cistern, proximity of privy, sewer, or drain thereto, and chance of pollution.
9. General topography of localities in a given town where cholera has prevailed.
10. Character of soil.
11. Character of drainage.
12. Occupation and habits of patient, and whether a resident of house where attacked for two weeks or over.
13. The facts in any case where the patient was attacked within two weeks after removing from an infected district into one previously free from the disease, specifying the respective districts and the character of the exposure.
14. The sequence of cases where more than one was attended, with their relations to each other, and to the cases of other physicians, with names of such physicians.
15. The means and agents used by the physician, by the family, and by the municipal authorities to prevent the spread of the disease, and the result of such preventive measures.
16. Public measures taken to prevent the introduction of the disease into your community, with the result.
17. Temperature, rain-fall, and prevailing winds for as long a period as practicable prior to appearance of cholera, and also during its continuance.
18. Dates of first and last cases of cholera in the locality in 1873—total number of cases and mortality.
19. Connection, if any, between first cases in 1873 and the localities of the disease in the immediately preceding epidemic.
20. Names of cities, towns and villages known to you where cholera occurred during 1873, with any facts relating to the introduction of the disease to such, and the address of some respectable practitioner residing in each of the places named.

Contributions to this investigation, by answers to the foregoing—or to so much thereof as is practicable—will be fully acknowledged in the official report, the value of which, it is hardly necessary to say, will largely depend upon the coöperation of the profession thus sought.

Copies of any reports or papers which you may have already prepared on the subject, or of those prepared by others and annotated or emended by yourself, will also be of service, and may be forwarded, to be returned, if desired. I am, Doctor, very respectfully, JNO. M. WOODWORTH,
Supervising Surgeon.

MANUFACTURE OF CAOUTCHOUC FROM MILK-WEED.—The *Canadian Pharmaceutical Journal* states that a company, having an authorized capital of $100,000, has recently been formed for the above purpose at London, Ont, In one experiment, one thousand pounds of milk-weed were operated on. and it was found to yield four per cent. of caoutchouc. The process consisted in subjecting the plant to partial decomposition, heating by steam, and then treating by maceration with coal-tar naphtha. The benzine, holding the caoutchouc in solution, was then distilled, when the rubber was finally obtained in a solid form.

Correspondence.

Letter from Philadelphia.

PHILADELPHIA, August 17, 1874.

MESSRS. EDITORS,—Philadelphia is stagnant. Houses closed by fifties. The city emptied of those who have means and leisure. Contrary to the supposition which naturally arises when one considers the condition of the streets, the city is unusually healthy and the death-rate surprisingly small. To what is this owing where drainage and cleanliness may be represented by 0?

Dr. Weir Mitchell has recently received a translated copy of his "Injuries of the Nerves," from the French editor and translator of the work. In a preface of forty odd pages, Prof. Vidiau (translator) alludes to Dr. Mitchell in terms warm with appreciation of the brilliant and original genius of the author. This unalloyed praise of an American medical author, and this eager reception and early translation of a medical book born in America, should be a source of deep gratification at home.

Here may follow, as a fitting sequence, details of Dr. Mitchell's treatment of locomotor ataxia, which I promised you last spring.

I have enjoyed frequent occasions of meeting Dr. Mitchell at his hospital for nervous diseases, where I have heard him discuss his method of relieving the disease in question, and much that I may say will, I believe, be an almost literal repetition of his remarks. I will also make use of a brief paper upon the "Influence of Rest in Locomotor Ataxia," which Dr. Mitchell published in the *American Journal of the Medical Sciences* for July, 1873.

It was his quickness of observation and ready power of generalization which led Dr. Mitchell to suspect the profound usefulness of rest in locomotor ataxia, and his paper presents several cases, the very striking results of which, as strong evidence of what rest will do in this disease, cannot be questioned. This paper gives details of five cases of locomotor ataxia of well-developed character, selected not because of any peculiarity in the history of the ataxia, but because of this apparently odd coincidence:—at a period of two to ten years after the initial attack, *every one of the five patients broke his leg*, one of them experiencing first a fracture of the thigh, afterward of the leg. These fractures enforced prolonged rest, during which the ataxia, in the first case, completely subsided, and failed thereafter to reappear. In the second case, the passive rest cut short the pain, which has never returned, and brought about an exceedingly indolent increase in the previously active ataxial symptoms. The third patient (he of the two fractures), up to the date of publication of his case (an interval of four years), enjoyed entire freedom from the disease, the march of which had previously been quite rapid. Case No. 4 broke his leg, went into complete repose, during which he disposed of the neuralgia, which did not recur; as to the ataxial symptoms, however, Dr. Mitchell could learn nothing, the case not having been in his hands. No. 5 suffered intensely painful attacks of neuralgia in connection with the ataxia; the left thigh became fractured, and the patient being at once put to bed, experienced only one attack of pain during the several weeks previous to publication of the case. A sixth patient, in the Orthopædic Hospital of Philadelphia, was a bad case of ataxia in the early stage. In order to test the correctness of his awakened belief in the value of absolute rest in ataxial neuralgia, Dr. Mitchell kept this patient several weeks in bed, no medicine being given until after the lapse of a month or more.

"The result, as to control of the pain," writes Dr. Mitchell, "has most surely been remarkable. Before going to bed, the patient could not walk without aid, nor stand with closed eyes even for a moment. The pain was inconstant, but never left him two days without extreme torment. Six weeks of almost absolute rest enabled him to stand for a few moments with closed

eyes, to walk unaided up and down the room, and to assure me of his entire freedom from pain after the seventh day in bed."

Dr. Mitchell thus concludes his suggestive paper:—

"I do not think these cases can be looked upon as mere coincidences of pain ceasing about the time of injury; I should rather conclude that exercise has power to flush the ganglia used in movement, just as thinking brings blood to the brain and raises its temperature, and that this afflux of blood, or at all events the mere functional activity, is in some way injurious and irritating to the diseased centres. This will seem at least a reasonable view, if we recall the influence of motion upon certain facial neuralgias. Even where there is no tender point, talking or chewing will often cause increase of pain, or awaken pain afresh. Thus, I have lately seen a case of frightful torment in the upper jaw, which was due to acid dyspepsia, and was cured when this state was relieved. The stomachal condition had created, however, a state of the nerve centres of the fifth nerve of such a character that if the patient attempted to talk or laugh it presently resulted in a severe fit of pain. Nor is this a very rare or merely curious example.

"Considering the posterior spinal ganglia and columns as being ready, in ataxia, to pass into the state which gives rise to pain, it seems likely enough that exercise may be efficient in bringing it on. Exercise does not only mean motion in a physiological view of its totality of results, but it also involves the passage centripetally of a host of impressions generated in the moving tissues, and of necessity passing through the central sensory ganglia and their related parts. The centres of motion and sensation are, therefore, active during movement, and are then alike excited, so that we may, with these facts in view, see why motion may excite sensory organs.

"It seems, then, that in the painful stage of locomotor ataxia, motion is probably injurious, and that rest in bed is for like reasons useful. Time, with future experience, can alone be relied upon to determine how general may be the value of some such mode of treatment of ataxia and ataxial pain, and how permanent may prove to be the result. I am perfectly assured, in my own belief, that rest will prove to be the best treatment for the early stages of ataxia; but if I were even less secure in my opinion, I should not hesitate to speak of it as a possible mode of relief, since so little of value has been offered in the way of cure, or even of partial relief in this long and distressing malady.

"It naturally occurs to ask why so many ataxics have chanced to break their limbs; and as to this I should answer, first, that no people are so awkward or fall so much, and next that, in some of the cases, it seemed to me that the habitual abruptness of the muscular acts had a share in the calamity, and that I have suspected, what has not yet been proved, that the bones in ataxics may suffer some impairment of their nutrition, and hence of their strength. Such was the case in Dr. Pennock's case, reported by Dr. C. Morris, where the lesion was sclerosis of the antero-lateral columns of the cord. But this is as yet purely speculative, however full of interest, and what I want to set forward prominently is that I have seen rest cure the neuralgia of posterior spinal sclerosis, and, apparently, in some cases, arrest the disease."

My notes represent Dr. Mitchell's latest views in regard to the treatment of locomotor ataxia, and are somewhat as follows :—

"No one need attempt the treatment of old confirmed ataxics. Catch them in the neuralgic stage, or at the onset of the attack, when eye and vesical troubles exist, and then treat them. For all, save old ataxics, I order *rest* (but that means *movelessness)*, vegetable and milk diet, hypodermic injections of corrosive sublimate, nitrate of silver internally and boldly, watching the gums for the blue line which precedes skin-tinting, and which is, also, I may add, not permanent. I have used all forms of galvanism, and now employ it in the neuralgia of ataxia, but rarely in any other stage. During the neuralgia it is used as in facial (neural) pain, the position of the poles (that is the direction of the current) being of no account. I never *cure* cases. Does any one? Patients with ataxic symptoms get well; those having

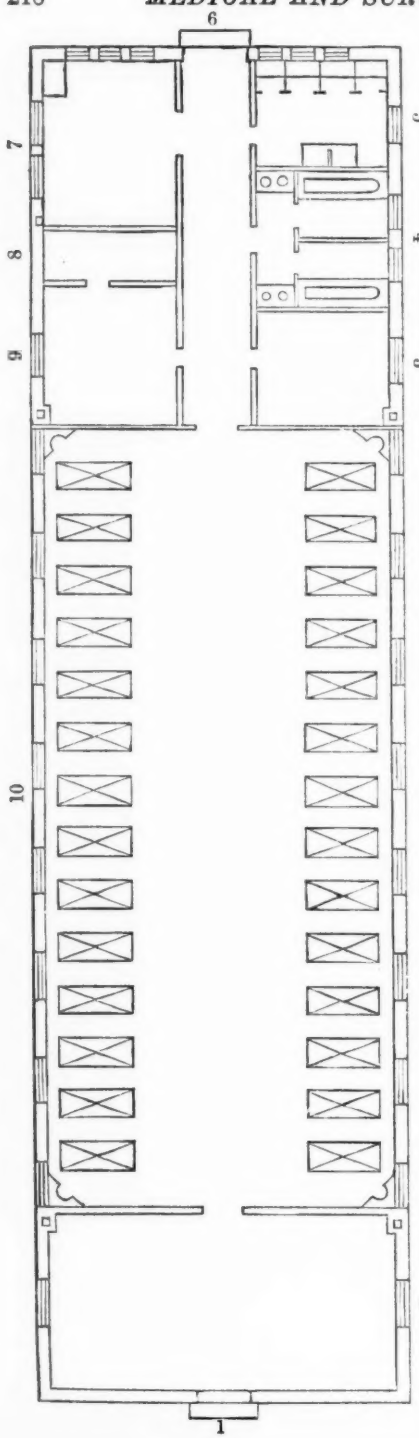
posterior sclerosis (of the cord) do not. The mere rarity of cures is proof that ataxy has not existed where recovery has been claimed."

It gives me pleasure to mention Dr. Mitchell in connection with a new enterprise, to which he is devoting an enthusiastic interest. I refer to a hospital which is to be erected by the managers of the Presbyterian Hospital of Philadelphia. The general plan is that which was employed in the construction of the one-story pavilion hospitals during our late war, and which have already been successfully imitated by the Germans in Leipzig, under the name of the "American Hospital." The plans and specifications of the projected hospital buildings include many improvements and modifications, suggested partly by the imperfections of the army buildings, but more especially by Dr. Mitchell (who has been a prime mover in the resuscitation of what is undoubtedly the best of plans for a healthful hospital), and by his co-workers, among whom the architect, Mr. Joseph M. Wilson, Engineer of Bridges and Buildings for the Pennsylvania Railroad, has been extremely active, lending his fertile intelligence, giving time and drawing up plans and specifications with no other remuneration than what he derives from the pleasure he finds in furthering the work. He will, if desired, also superintend the erection of the hospital. The Presbyterian Hospital has been favored, within the past few months, with legacies of such dimensions as have determined the managers to push the contemplated plan to completion, if I mistake not, within the coming year. Let me try to give you an impression of what the proposed buildings are to be.

The nucleate idea is a hospital entirely composed of one-story buildings. Each building will represent a single ward. Connected with the Massachusetts General Hospital, you have one or two wards thus arranged, but which, I believe, lack many of the healthful conveniences, as well as the utter simplicity of the proposed Presbyterian structures. You will observe that this simplicity, which, by the way, is the dominating feature of individual wards, is almost Spartan in character.

In attempting the description of a single ward, which will represent its fellows, I am happily able to include a ground plan, which I copy from a duplicate of the original plan, which was kindly furnished me by Mr. Wilson, the architect.

I will not give dimensions, since they may be seen in the plan which I draw, without regard to the scale of feet and inches. Taking one ward as a type of all: The building will be constructed of brick, will have double walls, with an interspace of four inches from ground support to roof. Hence the building will wear a protecting suit of brick within four inches of its own walls. The intervening cushion of air will acts as a non-conductor, &c. The floor will be put in at an elevation of five feet from the ground, the subjacent space powerfully ventilated by large, open arches, which are to be constructed every few feet on both sides throughout the whole length of the building. The ground beneath the ward will receive a solid covering of asphalt. The floor will be made of narrow strips of hard Carolina pine, the cracks leaded, the whole to be oiled, and thus rendered water-tight, even as to the wood itself. Like the walls, the floor will be double, and the interspace (six inches in depth) deadened and made solid by a concrete filling. The ward will have rounded corners, above and below; hence no dust can collect. Each of the four curves will be supplied with an open, low-down grate, for purposes of ventilation. Besides these, the building will be heated by a system of hot water. Windows, twelve feet apart, will begin two feet from the floor and reach to within one foot of the ceiling; will be made four feet wide, and be composed of three sashes, the two lower of which will be run by weight and pulley, and the upper turn on a pivot, after the manner of a transom. The sashes will be single, but made so as to receive a *double* glazing. The ward will be fifteen feet high on the square, but twenty-three and one half feet to the ventilator. There will be no horizontal ceiling, the plan being to ceil the inner side of the roof with a plaster so dense as to be impervious to moisture. Outer surface of roof to be slated. Wooden trusses, corresponding to the angle of the roof, will be set eleven feet apart throughout the



length of the ward, and an equal number of straight, iron girders, twelve feet from the floor, will connect the opposing walls. According to the plan, the roof terminates in a ridge ventilator, inside width of which is four and one half feet, and which occupies the entire length of the ward. Drop openings in the ventilator, hinged at their lower sides, will be managed from below by pulleys. The whole arrangement resembles the system of ventilation used in the Pullman palace cars. In the ward there will be wainscoatings, no mouldings, no panels in the doors; the wood work will be well served with oil and shellac, the utmost simplicity observed, and every effort made to prevent infection by any disease whatsoever. Not an ounce of paint will be used in any direction.

The ward will be provided with fourteen beds on each side, with six feet space between their centres. The end rooms, viz., sitting-room, nurses' room, linen closet, operating and bath-rooms, kitchen, &c., will be horizontally ceiled. A very sensible feature will be the glass floors and backs of the urinals. Indeed, it seems impossible to suggest a convenience, or point to a single thing which has been forgotten in this endeavor to plan a hospital which shall possess an absolutely healthful condition, and be freed from endemics and infection. Drainage will, of course, be perfect. The ward kitchen is intended for special diet cooking. General cooking will be done in the centre building, the plan being to have the wards on either side and at the end of the grounds, and to devote the central building to committee and managers' rooms, dispensary, main store closets, main kitchen, &c. Patients will not be allowed to enter this building without special permission. Central

1 South entrance.
2 Sitting-room, 30 by 16 ft.
3 Kitchen, 11 1-2 by 10 ft.
4 Bath and lavatories, 11 1-2 by 14 ft.
5 Water-closets, 11 1-2 by 11 ft.
6 North entrance.
7 Operating-room, 11 1-2 by 16 ft.
8 Linen closet, 11 1-2 by 5 ft.
9 Nurses' room, 11 1-2 by 14 ft.
10 Ward, 30 by 38 ft.

buildings and wards will have a railroad connection. The only ornamental portion of the hospital will be the front of those buildings whose end faces the street, and this will be simple. It is easy to see that the buildings will not only be severely simple and economical, but convenient, and, above all, healthful. The recent proposition to erect cheap wooden hospitals and destroy them by fire at the end of one or two years, becomes insignificant when compared with this better plan. It seems odd that Germany should have caught up and put into successful operation the hospital system which originated in America before we ourselves had made it permanent. UNGENNANT.

LETTER FROM LONDON.

LONDON, July 25, 1874.

IT has not fallen to my lot to hear much medical news in London. There is much interest taken in the inquest on the unfortunate "flying man," who was killed in an attempt to descend from beneath a balloon. With us, it might be argued that it was his own affair, or at most concerned others only inasmuch as they run the risk of being fallen on; but here it is held that the law should protect a man's life in spite of himself. To be consistent, the same law should protect the unwilling victims of chloroform, and perhaps it will in time, for I understand that ether is slowly gaining ground. The fire department has been strengthened in order to cope with the threatened conflagration of the Thames from a correspondence on the "woman question," carried on in the *Times* and *Saturday Review*. Desirous as our readers must be to hear the same arguments for the ninety-ninth time, my regard for the safety of the Frog Pond forbids my repeating them.

The museums present certain common merits and defects. Among the former is the fact that they are not mere depositories of specimens, but are arranged for the convenience of the students who are constantly seen in them at study. At Guy's, there is a long row of tables supporting beautifully executed models of dissections. Nothing, of course, can take the place of the real subject, but it is, nevertheless, a great advantage to have models always on hand. They are far superior to plates. A class of preparations that can hardly be praised too much is to be seen at St. Bartholomew's. It consists of small dissections of important and difficult regions, imbedded in plaster at the bottom of shallow vessels containing alcohol and covered by a plate of glass. They are beautifully clear and instructive. A fault common to these museums, and in a less degree to St. Thomas's, is the way in which specimens of normal and pathological anatomy are mixed together, and with those of comparative anatomy, apparently without method.

The Hunterian Museum stands by itself, and can hardly be judged by the same rule as the others, for it represents anatomy in its widest sense. Nothing can be better than the various series showing the different forms of corresponding bones among the vertebrates; and this system is not applied to bones alone, but to almost all the internal organs and those of special sense. The collection of whales is glorious. One would like to be an anatomical Jonah and be swallowed by each in turn. Among the preparations of human anatomy, several muscular dissections preserved in spirits deserve especial mention; the color, of course, is lost, but the size and shape of the muscles are almost unchanged. I have seen very few frozen sections in Great Britain, but those, as a rule, were good and well mounted. Corrosion preparations, on the other hand, though more numerous, are of little merit; this, in many cases, may be the result of their age. T. D., JR.

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[1] "I KNOW of no more wholesome state of mind for the investigation of truth than the ever-present consciousness of the possibility of error."—*West's Harveian Oration.*

Medical Miscellany.

THE fifth Cincinnati Industrial Exposition will be opened on Wednesday, September 2, and continue until Saturday, October 4th.

THE third semi-annual meeting of the New Hampshire Medical Society will be held on Tuesday and Wednesday, September 1st and 2d, at the Oceanic House, Star Island, Isles of Shoals. The Vermont and the North Essex (Mass.) Medical Societies have accepted invitations to join them in the excursion; also the New Hampshire Pharmaceutical Society, and a full attendance of members and ladies is expected.

ACCORDING to the *Medical Times and Gazette*, the patient in whom Billroth performed extirpation of the larynx with such success, an account of which appeared in a former number of this JOURNAL, has since died. The operation was performed on the 31st of December last, and death occurred on July 7th. The cancer reappeared locally soon after the patient's return to his home in Bohemia.

MUNIFICENT BEQUESTS.—A gentleman of Milan, named Ponti, has left his property, amounting to 825,000 francs (£33,000) to the three Academies of Science in London, Vienna and Paris, and to the General Hospital in Vienna, the last-named institution being entitled to any increase beyond the original sum. As the value of the property is now estimated to be £72,000, the hospital is likely to receive a large share. It is said, however, that the relatives of the deceased intend to oppose the will on the ground of the mental incapacity of the testator.—*London Medical Record.*

NOTES AND QUERIES.

WHY cannot apothecaries understand that anisette (a French cordial) is not the essence of anise, or spirits of anise (a vile solution of oil in alcohol), and not substitute the latter for the former in recipes sent to their establishments? Sooner or later, if they continue the reprehensible practice, a "misadventure" will bring discredit upon them, as well as danger to the patient, or death, if of infantile age. Apothecaries should *never* substitute any other drug for that directed without the knowledge and consent of the physician.

A SUFFERER.

MORTALITY IN MASSACHUSETTS.—*Deaths in sixteen Cities and Towns for the week ending August* 15, 1874.

Boston, 220; Worcester, 34; Lowell, 31; Milford, 5; Chelsea, 12; Salem, 11; Lawrence, 20; Springfield, 10; Lynn, 24; Gloucester, 11; Fitchburg, 5; Newburyport, 16; Somerville, 14; Fall River, 46; Haverhill, 11; Holyoke, 13. Total, 483.

Prevalent Diseases.—Cholera infantum, 162; consumption, 52; diarrhœa and dysentery, 25; typhoid fever, 17.

Boston reports 85, and Fall River 18, of the deaths from cholera infantum.

F. W. DRAPER, M.D.
Secretary pro tem. of the State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, August 22, 193. Males, 93; females, 100. Accident, 5; apoplexy, 3; inflammation of the bowels, 5; disease of the bowels, 1; bronchitis, 1; stone in bladder, 1; congestion of the brain, 1; disease of the brain, 4; cancer, 2; cholera infantum, 56; cholera morbus, 2; consumption, 19; convulsions, 10; debility, 6; diarrhœa, 5; diphtheria, 2; dropsy of the brain, 3; drowned, 1; dysentery, 3; epilepsy, 1; scarlet fever, 1; typhoid fever, 7; gastritis, 1; disease of the heart, 6; disease of the kidneys, 4; disease of the liver, 2; congestion of the lungs, 3; inflammation of the lungs, 3; marasmus, 9; old age, 4; paralysis, 1; peritonitis, 3; premature birth, 4; phlebitis, 1; puerperal disease, 2; pyæmia, 1; suicide, 2; scrofula, 1; scalded, 1; tabes mesenterica, 1; teething, 2; whooping cough, 3.

Under 5 years of age, 118; between 5 and 20 years, 14; between 20 and 40 years, 24; between 40 and 60 years, 15; over 60 years, 22. Born in the United States, 160; Ireland, 25; other places, 8.